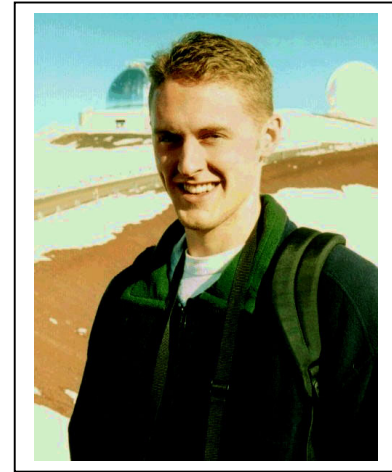


Stanford University
Stanford, CA

Aeronautics and Astronautics
Master of Science, June 2004

**NASA Academy Research Project:
The Influence of Gravity and Mechanical
Forces at the Cellular Level**

Principal Investigators: Drs. Nancy D. Searby
and Eduardo A. C. Almeida



EMAIL: alwood@stanford.edu

Education and Experience

Each shuttle mission, sketching its path across the Florida sky, inspires my awe and ambition to become involved in the space program. Being able to see the shuttle flame and plume from my front yard instills an interest in space and science that leads me to Stanford University and NASA Ames to pursue a career in space.

Being a Stanford graduate student presents the unique opportunity of collaborative research between Ames and Stanford faculty. Currently a first year master's student, I anticipate Academy research blooming into the pursuit of a doctoral degree in space biomechanics. In graduate school, I have quickly become involved in research. With Prof. Charles Steele and Ames researcher Dr. Sara Arnaud, I have aided in the construction of a noninvasive medical instrument that measures the bending stiffness of human long bones. During the Academy, I will investigate bone cells and their response to hypergravity. Together, these projects provide a comprehensive picture of bone behavior under various loading conditions.

Undergraduate – where did the years go? Time passed so quickly while earning majors in Physics and Astronomy at the University of Florida. During this time, I worked with condensed matter physicists researching novel metals at extremely low temperatures (0.3-10 K). Our specialty was discovering and characterizing semi-metallic compounds whose properties deviate from well accepted theory. This work culminated with four publications in Physical Review B of which I am a co-author. Each summer, I participated in undergraduate research programs, including the National Science Foundation's Research Experience for Undergraduates and the University Scholars Program (at the University of Florida).

Extracurricular Interests

In my free time I am usually running or biking in the Peninsula's foothills or swimming in the pool while training with the Stanford Triathlon Club. Counterintuitively, graduate school has seen my return to competitive sports. As a three-sport athlete in high school, my undergraduate career felt incomplete because elements of team camaraderie and intervarsity competition were missing. Although triathlon is mainly an individual sport, I enjoy the friendships that are forged while training. Sports, as well as other adventurous activities like SCUBA diving, hiking and skiing, get me outdoors and create a special balance between athletics and academics.

My most rewarding undergraduate experience was building a house for a needy family through the university's Habitat for Humanity chapter. I was involved in many aspects of the project including fundraising, volunteer recruitment and being the student construction leader. While learning construction techniques necessary to build a home, this experience developed and honed the communication and interpersonal skills essential to leadership.

My organizational involvement includes being a member of *Phi Beta Kappa*, AIAA, the National Space Society and the Society of Physics Students. With the Young Astronauts program at Stanford, I have helped teach elementary students basic science, engineering and space principles.

What's next? Upcoming plans include earning a pilot's license and becoming an expert mountaineer - Half-Dome, *El Capitan*, here I come!